National Aeronautics and
Space Administration

John H. Glenn Research Center
Lewis Field
Cleveland, OH 44135-3191

Reply to Attn of: CHA

MEMORANDUM FOR RECORD

FROM: CH/Deputy Procurement Officer, Procurement Division Office

SUBJECT: Source Selection Statement for NASA's Evolutionary Xenon Thruster – Commercial (NEXT-C) Procurement, Solicitation NNC14515408R

Procurement History

The NEXT-C procurement will establish a cost-share, research and development contract for a prototype power processing unit (PPU), two flight PPUs and two flight thrusters to be used as Government Furnished Equipment (GFE) on future NASA Discovery Missions. The contract will consist of one five-year base work effort and no option efforts.

On September 25, 2014, NASA issued a request for proposal (RFP) for the NEXT-C procurement. Because market research indicated that this procurement was not suitable for any Small Business set-asides, NASA created the RFP as a full-and-open competition with subcontracting goals. Market research, along with the nature of the deliverables, further indicated that this procurement was not suitable as a commercial purchase. Consequently, NASA conducted this procurement using Federal Acquisition Regulation (FAR) Part 15, Contracting by Negotiation, and North American Industrial Classification System (NAICS) code 541712 Research and Development - Physical, Engineering, Life Sciences (except Biotechnology). Due to the anticipated dollar value and complexity of the procurement, NASA formed a Source Evaluation Board (SEB) to request, receive and evaluate proposals in accordance with NASA FAR Supplement (NFS) Subpart 1815.370.

During the RFP phase of this procurement, three amendments were released. Amendment #1 revised a provisional cost attachment and presented a question & answer (Q&A) sequence. Amendment #2 made various non-substantive edits to RFP terms and conditions, posted various requested attachments, and presented a second Q&A sequence. Amendment #3 revised two provisional cost attachments and provided a requested provisional attachment in Microsoft Word format.

On November 4, 2014, the SEB received two timely proposals in response to the RFP. The two offers were submitted by the following organizations:

1) Aerojet Rocketdyne, Inc. (Aerojet)
2) Busek Co. Inc. (Busek)

Aerojet's proposal identified ZIN Technologies, Inc. (ZIN) as Aerojet's major subcontractor for the contract. Busek's proposal did not identify any major subcontractors.

Between November 5, 2014 and January 26, 2015, the SEB conducted its evaluation of these two proposals in accordance with Section M of the RFP.

While Section M of the RFP stated that, as prescribed in FAR 52.215-1, the Government intended to evaluate proposals and award a contract based on initial proposals, without discussions, the SEB's evaluation resulted in findings for both offerors that contained significant weaknesses and multiple administrative and cost issues. Accordingly, NASA was unable to award a contract based on initial proposals, and the SEB determined a competitive range and recommended NASA enter into discussions with those offerors within the competitive range.

Busek's proposal was not included in the competitive range. While Aerojet's proposal contained weaknesses and findings related to both the technical approach and to probable cost adjustments, the SEB determined that, given the opportunity to resolve weaknesses, Aerojet's proposal could be sufficiently improved to be considered for award of the cost-shared contract. As the Source Selection Authority (SSA), I was briefed on the SEB's findings, concurred with its recommendations and instructed the SEB to proceed with discussions. The full rationale supporting this decision is documented in the competitive range decision memorandum, signed on January 27, 2015.

NASA conducted an initial round of discussions with Aerojet. In these discussions, NASA notified Aerojet of all its weaknesses, noting the significant weakness, and the SEB's cost-volume findings. At the conclusion of these discussions, the SEB requested that Aerojet submit a Final Proposal Revisions (FPR) to NASA. Discussions were closed on February 18, 2015. Aerojet submitted a timely FPR to NASA on February 19, 2015. The SEB evaluated the FPR and found that Aerojet had remedied a majority of its original weaknesses, increased a strength of its original proposal to a significant strength, and remedied some of its cost findings. Notwithstanding these improvements, the SEB identified one new significant administrative/model contract finding and one new technical significant weakness that necessitated the need to discuss these issues with Aerojet. On February 26, 2015, the NASA Glenn Research Center (GRC) Procurement Officer granted the SEB permission to conduct a second round of discussions to address these new findings.

In this second round of discussions, the CO discussed the above two significant issues with Aerojet. As a result of these discussions, the CO requested an "interim" final proposal revision (IFPR). Aerojet provided a timely IFPR to NASA on March 9, 2015. The SEB evaluated the IFPR and found that Aerojet remedied both the significant administrative/contractual finding and the significant technical weakness. As no changes to the IFPR were required, the CO requested that Aerojet confirm that its IFPR constituted its FPR and that no additional changes were required. On March 11, 2015, Aerojet confirmed that its interim FPR constituted its final proposal revision.

Evaluation Procedures

As provided in Section M of the RFP, proposals were evaluated according to three factors. The evaluation factors were Mission Suitability, Past Performance, and Cost/Price.

The RFP stated that the Government intended to award a contract resulting from this solicitation to the responsible offeror whose proposal represented the best value after evaluation in accordance with the factors and subfactors in the solicitation. The factors and subfactors of the solicitation were broken down as follows:

1) **Volume I: Mission Suitability**. The Mission Suitability factor indicates the quality of the work to be performed and the ability of the Offeror to accomplish what is offered, or the product(s) to be delivered. The Mission Suitability factor is thus divided into four weighted subfactors; Technical Approach (TA), Commercialization (CO), Management Approach (MA) and Small Business Utilization (SB). TA and MA are further organized by various elements in order to aid the proposal preparation process; however all scoring was completed at the Subfactor level. The Subfactors as described in the RFP, with their respective weighting out of 1000 Mission Suitability points, are as follows:

   Subfactor A. Technical Approach (TA) (375 points)
   - TA1 – Power Processing Unit
   - TA2 - Thruster
   - TA3 – System Engineering and Integration
   - TA4 – Product Assurance

   Subfactor B. Commercialization (CO) (225 points)

   Subfactor C. Management Approach (MA) (325 points)
   - MA1 – Management Plans and Processes
   - MA2 - Safety
   - MA3 – Project Team
   - MA4 – Facilities and Infrastructure

   Subfactor D. Small Business Utilization (SB) (75 points)

2) **Volume II: Past Performance**. The RFP stated that NASA would evaluate the experience and past performance of Offerors and their major subcontractors. Several areas of this evaluation included Offerors' technical performance, contract management, and product commercialization on contracts over the past fifteen years. Additionally the RFP stated that the Government would evaluate the information provided in Volume II Past Performance, client questionnaires, one-on-one discussions with cognizant contract managers, Government's past performance databases, and any other source available to the Government, at the Government's discretion, for both prime and major subcontractors. Finally the RFP stated that Past Performance would not be numerically scored but would be evaluated using levels of confidence ratings.

3) **Volume III: Cost.** The RFP stated that the cost volume is not numerically scored nor does it receive an adjectival rating. The RFP defined various cost aspects to be evaluated, such as:
   - Performing a cost realism analysis to ensure that a fair and reasonable price is paid by the Government and to assess the reasonableness and realism of the proposed costs.
   - The status of each offerors' systems and audits of such system.
   - The proposed cost sharing arrangement.
   - Compliance with the proposed maximum government cost liability stated in the RFP.

   The RFP stated that per NFS 1815.304-70, a lack of cost realism could adversely affect Mission Suitability scores and result in cost realism adjustments under the Cost Factor.

As provided in Section M of the RFP, Mission Suitability, Past Performance and Cost are all equal in importance. Section M further provides that Mission Suitability and Past Performance, when combined, are significantly more important than Cost.

Findings

This section summarizes the SEB's findings based on Aerojet's Final Proposal Revisions.

Volume I: Mission Suitability
The SEB rated Aerojet an overall score of 693 out of 1000 Mission Suitability points. This score is the culmination of the SEBs ratings of Aerojet's proposal of each of the four Mission Suitability areas of Technical Approach, Commercialization, Management Approach and Small Business Utilization.

- **Subfactor A – Technical Approach (TA)**
- Rating: 293/375; Very Good
- 1 Significant Strength, 3 Strengths, 2 Weaknesses

  Significant Strength – TA3 - Product Assurance. The Offeror's proposal describes a complete and comprehensive approach to product assurance closely tied with risk management, which derives balanced assurance support and indicates a thorough understanding of NASA Safety & Mission Assurance (S&MA) requirements appropriate for the mission classification, including all required aspects of a certified quality management system and specific assurance processes. The complete and comprehensive approach to product assurance greatly enhances the potential for successful contract performance.

  Strength - TA1 – Power Processing Unit. The Offeror's proposal provides a thorough, detailed, and comprehensive description of the overall technical approach to developing, fabricating a prototype power processing unit (PPU), and mitigating schedule and cost risks. The Offeror's proposed overall technical approach to developing, fabricating a prototype PPU, and mitigating schedule and cost risks demonstrates an exceptional understanding of the PPU work and greatly enhances the potential for successful contract performance.

Strength – TA2 – Thruster. The Offeror proposes implementing a detailed list of thruster design improvements and cost savings options. The Offeror's thorough understanding of existing thruster design issues and its approach to implementing design/process changes greatly reduces the risk of meeting contract technical requirements.

Strength – TA3 – Systems Engineering and Integration. The Offeror's proposal demonstrates an excellent understanding of the systems engineering necessary to comply with contractual requirements. The Offeror's description of systems engineering management processes and plans illustrates an excellent understanding of system engineering processes, which increases the likelihood of meeting the contract requirements.

Weakness – TA1 – Power Processing Unit. The Offeror's technical approach is not realistically estimated in the cost volume. The Offeror's proposed cost of performing the PPU aspect of the work increases cost and schedule risk relative to meeting the NASA need date.

Weakness – TA2 – Thruster. The Offeror's proposal does not include a thruster pyroshock test. The lack of a thruster pyroshock test in the Offeror's proposal adds risk of unsuccessful contract performance and increases the cost to the Government.

- **Subfactor B – Commercialization (CO)**
- Rating: 140/225; Good
- 1 Strength

Strength – Commercialization. The Offeror's approach to commercialization, including thorough market engagement and investment in cost-saving technology, effectively advances the commercialization of NEXT-C. Successful sale to the Offeror's identified mission opportunity will significantly enhance NEXT-C use and commercialization.

- **Subfactor C – Management Approach (MA)**
- Rating: 169/325; Good
- 2 weaknesses

Weakness – MA1 – Management Plans and Processes. The Offeror's overall project schedule is overly optimistic and contains inconsistencies at subproject level schedules. The Offeror's inconsistent project schedule and milestone information, and overly optimistic schedule features, increase the schedule risk of successful contract performance.

Weakness – MA3 – Project Team. The Offeror's project team experience does not include electric propulsion power processing unit design and manufacture. The lack of electric propulsion PPU design and manufacture expertise in the

relevant key members of the Offeror's proposed project team adds risk to the contract management and technical performance.

- **Subfactor D – Small Business Utilization**
- Rating: 71/75; Excellent
- 1 significant strength

Significant Strength – SB – Small Business Utilization. The Offeror's proposal provides a comprehensive commitment to the Small Business Program that exceeds RFP requirements. By providing a comprehensive subcontracting plan and describing its commitment to small businesses on multiple levels, the Offeror's strong commitment to the small business program greatly contributes to NASA's ability to meet GRC-center and agency small business goals.

Volume II: Past Performance

- **Level of Confidence – High Level of Confidence.**
- 2 Significant Strengths, 1 Strength

The Offeror's past performance is reasonably relevant to this acquisition. The Offeror demonstrated effective performance that was fully responsive to contract requirements with contract requirements accomplished with minor problems having little identifiable effect on overall performance. The major subcontractor's past performance was exceptional in all areas and was somewhat relevant to this acquisition. Based on the Offeror's performance record, there is a high level of confidence that the Offeror will successfully perform the required effort.

Significant Strength – Proposal Volume II. The Offeror and its major subcontractor have a number of contracts similar in size and scope which are considered highly relevant to the to the NEXT-C contract. This highly relevant team experience, of contracts highly relevant in nature to NEXT-C, is considered to be a very strong indicator of successful performance under the anticipated contract.

Significant Strength – Past Performance Questionnaires (PPQ). The Offeror and its major subcontractor have a number of contracts similar in size and scope which are considered highly relevant to the to the NEXT-C contract. This exceptional past performance on relevant contracts is a strong indicator of successful performance under the anticipated contract.

Strength – Past Performance Information Retrieval System (PPIRS). The Offeror and its Major Subcontractor were rated very good by the majority of clients in the various evaluation categories in the Government Past Performance Information Retrieval System (PPIRS). The very good past performance on contracts similar in nature to NEXT-C is a positive indicator of successful performance under the anticipated contract.

Volume III: Cost

- Aerojet proposed a final total project cost of $18.41M.
- Aerojet proposed a final total cost share arrangement of 93% Government share, 7% Contractor share.
- With Government share, the total Government estimated cost for the contract is $17.12M.
- NASA performed a cost realism analysis and determined that Aerojet's probable cost exceeds the proposed value by roughly 17%. Lack of cost realism was reflected in a Mission Suitability weakness.
- No deficiencies or other issues were found during the business systems analysis.

Source Selection Briefing

On March 16, 2015 a briefing of the detailed findings of the SEB was made to me in my capacity as the SSA. Prior to the briefing, I was provided with a full set of findings to review, which I did review before making my selection. SEB voting members, SEB committee members, SEB ex-officio members, and key management officials also attended the briefing. During the briefing, the overall evaluation process and findings on Mission Suitability, Past Performance, and Cost were presented and discussed. Additionally, during the briefing, I provided the SEB with my independent judgment relative to the findings and asked questions regarding the information presented. At the conclusion of the meeting, I informed the attendees of my decision and my reasons for selection. This selection decision results from the briefing and my review of the full set of findings.

Source Selection Decision

I fully understand the evaluation process and the findings of the evaluation team, and I concur with the overall SEB evaluation and findings. Based upon the information presented concerning the process used by the SEB, I accept the findings as presented and the evaluation results and take no exception to the actions or findings of the SEB. I understand that the three Evaluation Factors – Mission Suitability, Past Performance, and Cost – are equal in value. Additionally, I understand that Mission Suitability and Past Performance, when combined, are significantly more important than Cost. I also understand that award should be made to the responsible offeror whose proposal meets the requirements of the RFP and provides the "best value" to the Government. Ultimately, since there was only one proposal in the competitive range, my decision essentially consisted of determining whether the remaining offeror has demonstrated sufficient quality to outweigh any remaining weaknesses and whether the proposed cost and cost share were reasonable.

Since Mission Suitability, Past Performance and Cost are all equal in importance, I considered them all equally in my decision here, as well as my concurrence with the Contracting Officer's competitive range decision. In both instances, I also considered that Mission Suitability and Past Performance, when combined, are significantly more important than Cost.

Aerojet performed well in Mission Suitability, earning 693 out of 1000. Specifically, all four of their proposed subfactors in Mission Suitability were given ratings of 'Good' or higher.

I agree with the SEB's rating of 'Very Good' for Aerojet's response to the Technical Approach Subfactor. Aerojet successfully resolved any major weaknesses in this subfactor during discussions. Ultimately, Aerojet's proposal earned two strengths in the Power Processing Unit and Thruster sections. These ratings constitute strong evidence that Aerojet has a solid technical approach to providing a prototype PPU, flight PPUs, and flight thrusters. Aerojet's proposal is further bolstered by the very strong approach that Aerojet took to product assurance, which Aerojet was able to increase from a strength to a significant strength. Aerojet's proposal contains a thorough and detailed plan to providing NASA the required prototype and flight hardware by the end of the contract period of performance. Aerojet's proposal further demonstrates that Aerojet possesses the ability to integrate the required systems per the Statement of Work. After reviewing the remaining weaknesses of Aerojet's proposal and discussing these with the SEB, I find that these weaknesses are not strong enough to preclude a contract award and can be mitigated and managed during contract administration.

I agree with the SEB's rating of 'Good' for Aerojet's response to the Commercialization Subfactor. Aerojet's proposal received no weaknesses for this subfactor. Further, the strength that Aerojet's proposal received in this subfactor reflects Aerojet's commitment to the commercialization aspect of this procurement by thoroughly engaging the market and anticipating the potential use of cost-saving technologies.

I agree with the SEBs rating of 'Good' for Aerojet's response to the Management Approach subfactor. Aerojet's proposal met the requirements for a sizeable portion of this subfactor by providing an adequate Safety and Health Plan and an adequate description of its use of facilities and infrastructure. After reviewing the remaining weaknesses and discussing these with the SEB, I find that these weaknesses are not strong enough to preclude a contract award and can be mitigated and managed during contract administration.

I agree with the SEB's rating of 'Excellent' for Aerojet's response to the Small Business Utilization subfactor. In its proposal, Aerojet provided a thorough and comprehensive commitment to the small business program that exceeded RFP requirements. Specifically, Aerojet far-exceeded NASA's goals for both small and small disadvantaged businesses, and Aerojet's Small Business Subcontracting Plan provides numerous examples and descriptions of its extensive company practices of subcontracting to various small business socioeconomic categories. This commitment greatly contributes to NASA's ability to meet GRC-center and agency small business goals.

I agree with the SEB's level of confidence rating for Aerojet's Past Performance. Earning two Significant Strengths and one Strength in this evaluation factor, Aerojet and its major subcontractor, ZIN Technologies, presented strong evidence of very good past performance on a variety of highly-relevant contracts. Additionally, this evidence was further bolstered by both the past performance questionnaires that Aerojet and ZIN submitted to their past customers and the independent research that NASA performed via the Past Performance Information Retrieval System (PPIRS).

Finally, Aerojet showed its commitment to the NEXT-C program by agreeing to provide a cost-share of 7% for the duration of the contract. I do not anticipate any sizeable risk with Aerojet's various business systems due to the fact that no deficiencies or other issues were identified by the SEB. Aerojet's proposed estimated cost is roughly 17% lower than what NASA determined as a realistic cost in its cost-realism analysis. As a result, I have determined that there is a probability of a cost overrun; however, since the offeror has confirmed, through discussions, that it believes its proposed cost is realistic, and since the offeror has committed to sharing 7% of any cost overrun, I determine that this is an acceptable contract management risk.

In summary, considering the factors of Mission Suitability, Past Performance, and Cost, Aerojet provided a strong proposal with a sound overall approach to completing the work under the NEXT-C contract. Aerojet's proposal is bolstered by evidence of its and its Major Subcontractor's positive past performance results on several other highly-relevant contracts. Finally, Aerojet proposed to complete the work under the contract at a fair and reasonable price that meets the intent of the procurement by providing cost-sharing. Based on these considerations and for the reasons stated above, I conclude that Aerojet is fully capable of performing the contract in a manner most advantageous to NASA, all factors considered.

Therefore, in accordance with the RFP requirements and acknowledging the relative importance of the evaluation criteria as stated earlier, I find that Aerojet Rocketdyne, Inc. provided the best value to the Government and I hereby select Aerojet Rocketdyne, Inc. to perform NASA's Evolutionary Xenon Thruster – Commercial (NEXT-C) Procurement contract as outlined in the request for proposal NNC14515408R for a total estimated contract cost of $18,410,242, with NASA sharing 93%, or $17,121,525 of these costs.

Mark W. Manthey
Source Selection Authority

3/25/15
Date